
**INDIANA UTILITY REGULATORY COMMISSION
General Administrative Order
of the Indiana Utility Regulatory Commission
2007-1**

WHEREAS, in accordance with the provisions of Indiana Code 8-1-22.6 et seq., the Pipeline Safety Division of the Indiana Utility Regulatory Commission shall establish voluntary guidelines to be considered by a pipeline company that proposes to construct an interstate pipeline that will be located, in whole or in part, in Indiana.

WHEREAS, the Pipeline Safety Division of the Indiana Utility Regulatory Commission developed guidelines through a public process, including consideration of comments regarding proposed guidelines which were received at three public meetings held throughout the state.

WHEREAS, Indiana Code 8-1-22.6 et seq. also requires the Indiana Utility Regulatory Commission to adopt the voluntary guidelines as a nonrule policy document to be published in the Indiana Register by September 1, 2007.

WHEREAS, the Indiana Utility Regulatory Commission traditionally adopts General Administrative Orders to effectuate its nonrule policies.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED that the voluntary Pipeline Construction Guidelines Pursuant to Indiana Code 8-1-22.6 et seq., which are attached to the General Administrative Order as Appendix A, be adopted by this Commission.

David Lott Hardy, Chairman

Jeffrey L. Golc, Commissioner

Larry S. Landis, Commissioner

Gregory D. Server, Commissioner

ABSENT

David E. Ziegner, Commissioner

I hereby certify that the above is a true and correct copy of the resolution as approved.

Brenda A. Howe, Secretary to the Commission

Date: _____

APPENDIX A

**INDIANA UTILITY REGULATORY COMMISSION
PIPELINE CONSTRUCTION GUIDELINES**

I. Purpose

Interstate pipelines are essential and bring value to Indiana citizens by increasing the ability of utility companies to supply energy reliably and at the best prices for their customers. Pipelines are operated under a variety of federal and state regulations and industry standards intended to ensure public and environmental safety and health. Such regulations and standards address all aspects of pipeline operations, including where they are built; how they are built, operated and maintained; how they are tested; and what programs and procedures the operators must have to ensure the integrity of the pipelines and their operation. Pipeline operators are inspected by both federal and state pipeline safety inspectors to ensure they meet or exceed the regulatory requirements and standards.

The guidelines contained herein are recommended by the Indiana Utility Regulatory Commission pursuant to the authority granted in Indiana Code 8-1-22.6. The guidelines do not pre-empt any existing federal, state or local regulations and are not applicable to construction activity occurring entirely on a public right-of-way, a railroad right-of-way or publicly-owned land. The purpose of this document is to establish guidelines to simplify negotiations between landowners and pipeline companies. These guidelines are not binding on any pipeline company or landowner but may be voluntarily adopted by a pipeline company and individual landowners. If a pipeline company and a landowner agree to follow these guidelines, the guidelines are subject to modification through negotiation by landowners and a representative of the pipeline company, provided such changes are

negotiated in advance of any construction. Although the guidelines are voluntary pursuant to [IC 8-1-22.6](#), there are provisions incorporated in the guidelines that are mandatory either under the authorizing statute or other state or federal statutes and nothing in the guidelines should be construed as affecting the mandatory nature of those provisions.

II. Definitions

The following words and terms, when used in these rules, shall have the meanings indicated below:

a. "Agricultural land" shall mean:

- (1) Land which is presently under cultivation, or
- (2) Land which has previously been cultivated and not subsequently developed for non-agricultural purposes, or
- (3) Cleared land capable of being cultivated.

It includes land used for crop land, hay land, improved pasture land, truck gardens, farmsteads, commercial agricultural related facilities, feedlots, livestock confinement systems, land on which farm buildings are located, and land in government set-aside programs.

b. "Drainage structures" or "underground improvements" means any permanent structure used for draining agricultural lands, including tile systems and buried terrace outlets.

c. "Landowner" means an owner of an interest in property that:

- (1) is located in Indiana; and
- (2) meets one or more of the conditions set forth in 18 CFR 157.6(d)(2).

d. "Pipeline" means all parts of those physical facilities through which gas, hazardous liquids, or carbon dioxide fluid moves in transportation, including pipe, valves, and other appurtenances attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies, but excluding motor vehicles of all kinds and pipelines serving not less than ten (10) customers with petroleum gas from a common source.

e. "Pipeline company" means any person, firm, copartnership, association, corporation, or syndicate, or any employee, agent or contractor thereof, engaged in or organized for the purpose of owning, operating, or controlling pipelines.

f. "Pipeline construction" means the physical work involved in the construction, reconstruction or extension of a pipeline, but shall not include work performed during an emergency. Emergency means a condition where there is clear and immediate danger to life or health, or essential services, or a potentially significant loss of property. When the emergency condition ends, these guidelines will again become effective. "Pipeline construction" shall include maintenance and repair work only in circumstances where application of these guidelines is possible, practical and appropriate for the nature and scope of the work to be completed.

g. "Soil conservation practices" means any land conservation practice recognized by federal or state soil conservation agencies including, but not limited to, grasslands and grassed waterways, hay land planting, pasture, and tree plantings. Conservation practices that are under contract with USDA or other federal agencies will have construction designs and criteria on file at the county USDA Center.

h. "Soil conservation structures" means any permanent structure recognized by federal or state soil conservation agencies including, but not limited to, toe walls, drop inlets, grade control works, terraces, levees, and farm ponds.

i. "Till" means to loosen the soil in preparation for planting or seeding by plowing, chiseling, discing, or similar means. For the purposes of this chapter, agricultural land planted using no-till planting practices is also considered tilled.

j. "Topsoil" means the upper part of the soil which is the most favorable material for plant growth and which can ordinarily be distinguished from subsoil by its higher organic content and darker color (typically classified as the "A Horizon" soil).

III. General Provisions for Pipeline Construction

a. Depth.

Differing regions vary in terms of soil, geography, land use and proximity to other underground structures. Those differences should be considered in determining appropriate pipeline depth. In general, pipelines in agricultural land should be installed with a minimum cover of 48 inches, with the following exceptions:

- (1) A minimum of 60 inches of cover should be maintained over the top of the pipeline where it crosses surface drains, diversions, grassed waterways, open ditches, and streams.
- (2) In those areas where (i) rock in its natural formation and/or (ii) a continuous strata of gravel exceeding 200 feet in length are encountered, the minimum depth of cover should be 30 inches.

b. Restoration of Land Slope and Contour.

Upon completion of construction, the slope, contour, grade, and drainage pattern of the disturbed area shall be restored as nearly as possible to its preconstruction condition. However, the trench may be crowned to allow for anticipated settlement of the backfill. Excessive or insufficient settlement of the trench area, which visibly affects land contour or undesirably alters surface drainage, shall be remediated by means such as regrading and, if necessary, import of appropriate fill material. Disturbed areas in which erosion causes formation of rills or channels, or areas of heavy sediment deposition, shall be regraded as needed. On steep slopes, methods such as sediment barriers, slope breakers, or mulching shall be used as necessary to control erosion until vegetation can be reestablished. On agricultural land subject to erosion, the pipeline company will patrol the pipeline right-of-way with reasonable frequency to detect erosion of the top cover and maintain the cover.

c. Restoration of Areas Used for Field Entrances and Temporary Roads.

Upon completion of pipeline construction and land restoration, field entrances or temporary roads built as part of the construction project shall be removed and the land made suitable for return to its previous use. Areas affected shall be regraded and deep tilled as appropriate and in accordance with these guidelines. If by agreement or at landowner request, and subject to any necessary approval by local public road authorities, a field entrance or road is to be left in place, it shall be left in a graded and serviceable condition.

d. Pipeline Construction in Wet Conditions.

Pipeline construction in wet soil conditions shall not commence or continue at times when or locations where the passage of heavy construction equipment may cause rutting to the extent that the topsoil and subsoil are mixed, or underground drainage structures may be damaged. To facilitate construction in soft soils, the pipeline company may elect to remove and stockpile the topsoil from the traveled way, install mats or padding, or use other methods acceptable to the landowner and pipeline company.

e. Crossing of Streams, Wetlands and Flood Plains.

Pipeline construction should be completed in accordance with all applicable state, federal and local environmental regulations and permitting systems. Pipeline construction involving crossings of wetlands or streams may require permitting from the U.S. Army Corps of Engineers, the most common of which are Nationwide Permit 3, Nationwide Permit 12 and Regional General Permit 1. In addition pipelines crossing flood plains may require permitting from the Indiana Department of Natural Resources.

IV. Restoration of Agricultural Lands During Pipeline Construction

a. Topsoil Separation and Replacement.

(1) Removal. Topsoil removal and replacement in accordance with these guidelines should be adhered to for any open excavation associated with the construction of a pipeline unless otherwise provided in these guidelines. The topsoil depth shall be determined by a properly qualified agricultural inspector, soil scientist or soil technician who will set stakes or flags every 200 feet along the right-of-way identifying the depth of topsoil to be removed. As an alternative to staking or flagging the pipeline company may depict topsoil depths on alignment sheets based on published county-level soil survey information. The actual depth of the topsoil, not to exceed 36 inches, will first be stripped from the area to be excavated above the pipeline and, to a maximum of 12 inches, from the adjacent subsoil storage area. Topsoil shall also be removed and replaced in accordance with these rules at any location where land slope or contour is significantly altered to facilitate construction. A pipeline company shall, upon a landowner's request, measure topsoil depth at selected locations before and after construction.

(2) Soil storage. The topsoil and subsoil shall be segregated, stockpiled, and preserved separately during subsequent construction operations. The stored topsoil and subsoil shall have sufficient separation to prevent mixing during the storage period. Topsoil shall not be used to construct field entrances or drives, or be otherwise removed from the property, without the written consent of the landowner. Topsoil shall not be stored or stockpiled at locations that will be used as a traveled way by construction equipment without the written consent of the landowner. The stored topsoil shall be protected from erosion by seeding a temporary cover if stockpiled more than 20 days during the growing season (April 1 through November 1). The stored topsoil shall be protected from erosion by straw mulch cover if stockpiled more than 20 days outside the growing season.

(3) Topsoil removal not required. Topsoil removal is not required where the pipeline is installed by plowing, jacking, boring, or other methods which do not require the opening of a trench. If provided for in a written agreement with the landowner, topsoil removal is not required if the pipeline can be installed in a trench with a top width of 18 inches or less.

(4) Backfill. The topsoil shall be replaced so the upper portion of the pipeline excavation and the crowned surface, and the cover layer of the area used for subsoil storage, contain only the topsoil originally removed. The depth of the replaced topsoil shall conform as nearly as possible to the depth removed. The topsoil must be replaced so that after settling occurs, the topsoil's original depth and contour (with an allowance for settling) will be restored. The same shall apply where excavations are made for road, stream, drainage ditch, or other crossings. In no instance will the topsoil be used for any other purpose.

b. Drain Tile.

The pipeline company will endeavor to locate all tile lines within the right-of-way prior to the pipeline installation so repairs can be made if necessary. The pipeline company will contact landowners/tenants to request information about tile line locations prior to construction and alert construction crews of the possible need for tile line repairs.

(1) Pipeline clearance from drain tile. Where underground drain tile is encountered, the pipeline shall be installed in such a manner that the permanent tile repair can be installed with at least 12 inches of clearance from the pipeline.

(2) Temporary repair. The following standards shall be used to determine if temporary repair of agricultural drainage tile lines encountered during pipeline construction is required:

(A) Any underground drain tile damaged, cut or removed and found to be flowing or which subsequently begins to flow shall be temporarily repaired as soon as practicable, and the repair shall be maintained as necessary to allow for its proper function during construction of the pipeline. The temporary repairs shall be maintained in good condition until permanent repairs are made.

(B) If tile lines are dry and water is not flowing, temporary repairs to damaged, cut or removed drain tile are not required, but permanent repair must be completed as soon as practicable and tile must be maintained to allow for proper function at all times during pipeline construction.

(C) Temporary repair is not required if the angle between the trench and the tile lines places the tile end points too far apart for temporary repair to be practical.

(D) If temporary repair of the line is not made, the upstream exposed tile line shall not be obstructed but shall nonetheless be screened or otherwise protected to prevent the entry of foreign materials and small animals into the tile line system, and the downstream tile line entrance shall be capped or filtered to prevent entry of mud or foreign material into the line if the water level rises in the trench.

(3) Marking. Any underground drain tile damaged, cut or removed shall be marked by placing a highly visible flag in the trench spoil bank directly over or opposite such tile. This marker shall not be removed until the tile has been permanently repaired.

(4) Permanent repairs. Tile disturbed or damaged by pipeline construction shall be repaired to its original or better condition. Permanent repairs shall be completed as soon as is practical, but no later than 14 days after the pipeline is installed in the trench and prior to backfilling of the trench over the tile line. Permanent repair and replacement of damaged drain tile shall be performed in accordance with the following requirements:

(A) All damaged, broken, or cracked tile shall be removed.

(B) Only unobstructed tile shall be used for replacement.

(C) The tile furnished for replacement purposes shall be of a quality, size and flow capacity at least equal to that of the tile being replaced.

(D) Tile shall be replaced so that its original gradient and alignment are restored, except where relocation or

rerouting is required for angled crossings. Tile lines at a sharp angle to the trench shall be repaired in the manner shown in the referenced drawing and in accordance with Indiana Natural Resources Conservation Service (NRCS) Field Office Technical Guide (FOTG) Standard 606.

(E) The replaced tile shall be firmly supported to prevent loss of gradient or alignment due to soil settlement. The method used shall be comparable to that shown in the referenced drawing and in accordance with Indiana NRCS FOTG Standard 606.

(F) Before completing permanent tile repairs, all tile lines shall be examined visually, by probing, or by other appropriate means on both sides of the trench within any work area to check for tile that might have been damaged by construction equipment. If tile lines are found to be damaged, they must be repaired to operate as well after construction as before construction began. The pipeline company shall contact the landowner prior to final backfill and restoration and offer the landowner the opportunity to observe the repair.

(G) Following completion of the pipeline, the pipeline company will be responsible for correcting all tile line repairs that fail due to pipeline construction, provided those repairs were made by the pipeline company. The pipeline company will not be responsible for drain tile line repairs that the company pays the landowner to perform. The plans for the repairs shall be approved by the landowner prior to beginning work on the repair.

(5) Backfilling. The backfill surrounding the permanently repaired drain tile shall be completed at the time of the repair and in a manner that ensures that any further backfilling will not damage or misalign the repaired section of the tile line.

(6) Subsurface drainage. Subsequent to pipeline construction and permanent repair, if the tile line in the area disturbed by construction is not functioning correctly or the land adjacent to the pipeline is not draining properly and can reasonably be attributed to the pipeline construction, the pipeline company shall make further repairs or install additional tile as necessary to restore subsurface drainage.

(7) Correction of Future Drainage Problems. The pipeline company shall be responsible for installing such additional drainage measures as are necessary to properly drain wet areas on the permanent and temporary easements caused by the construction and/or existence of the pipeline.

(A) The pipeline company shall consult with the landowner concerning the landowner's plans for future drain tile installation. At locations where proposed future installation of underground drain tile is made known in writing to the company prior to the securing of an easement on the property, the pipeline shall be installed at a depth which will permit proper clearance between the pipeline and the proposed tile installation.

(B) The pipeline company shall consult with the landowner concerning the landowner's plans for future installation of soil conservation practices and structures. At locations where proposed future installation of soil conservation practices and structures is made known in writing to the company prior to the securing of an easement on the property, the pipeline shall be installed at a depth which will allow for future installation of such soil conservation practices and structures and retain the integrity of the pipeline.

c. Removal of Rocks and Debris from the Right-of-Way.

(1) Removal. Before replacing any topsoil, all rocks greater than 3 inches in any dimension will be removed from the surface of all exposed subsoil and from all subsoil replaced in trenches. In no event shall the top 42 inches or the actual depth of top cover, whichever is less, within the pipeline trench, bore pits, or other excavations contain rocks of any greater concentration or size than existed prior to the pipeline construction. If trenching, blasting or boring operations are required through rocky terrain, suitable precautions will be taken to minimize the potential for oversized rocks to become interspersed with adjacent soil material. Consolidated rock removed by blasting or mechanical means shall not be placed in the backfill above the natural bedrock profile or above the frost line. In addition, the pipeline company shall examine areas adjacent to the easement and along access roads and shall remove any large rocks or debris which may have rolled or blown from the right-of-way or fallen from vehicles.

(2) Disposal. Rock which cannot remain in or be used as backfill shall be disposed of at locations and in a manner mutually satisfactory to the company and the landowner. Soil from which excess rock has been removed may be used for backfill. All debris attributable to the pipeline construction and related activities shall be removed and disposed of properly. For the purposes of this rule, debris shall include spilled oil, grease, fuel, or other petroleum or chemical products. Such products and any contaminated soil shall be removed for proper disposal or treated by appropriate in situ (i.e., in its original, natural position) remediation.

d. Restoration After Soil Compaction and Rutting.

(1) Agricultural restoration. Agricultural land, including off right-of-way access roads traversed by heavy construction equipment that will be removed, shall be deep tilled where feasible to alleviate soil compaction upon

completion of construction on the property. If the topsoil was removed from the area to be tilled, two passes with deep tillage equipment shall precede replacement of topsoil. At least one pass with deep tillage equipment shall be made following topsoil replacement. Tillage shall be at least 16 inches deep in land used for crop production and 12 inches deep on other lands and shall be performed under soil moisture conditions which permit effective working of the soil. Areas affected shall be seeded with a cover crop or permanent vegetative cover within five days after deep tillage. If deep tillage can only be completed outside the growing season, the areas shall be dormant seeded and covered with mulch. Upon agreement, this tillage may be performed by the landowners or tenants using their own equipment.

(2) Rutted land restoration. Rutted land shall be deep tilled according to procedures in item "d (1)" above and graded until restored as near as practical to its preconstruction condition. On land from which topsoil was removed, the rutting shall be remedied before the topsoil is replaced.

e. Restoration of Waterways, Water and Sediment Control Basins, and Other Erosion Control Structures.

Existing soil conservation practices and structures damaged by the construction of a pipeline shall be restored to the elevation and grade existing prior to the time of pipeline construction. Any drain lines or flow diversion devices impacted by pipeline construction shall be repaired or modified as needed. Soil used to repair embankments intended to retain water shall be well compacted. Disturbed vegetation shall be reestablished, including a cover crop when appropriate. Restoration of waterways and other erosion control structures shall be in accordance with the Indiana NRCS FOTG Standards 638 and Code 412.

f. Revegetation of Untilled Land.

(1) Crop production. Agricultural land not in row crop or small grain production at the time of construction, including hay ground and land in conservation or set-aside programs, shall be reseeded, including use of a cover crop when appropriate, within five days following completion of deep tillage and replacement of the topsoil. The seed mix used shall restore the original or a comparable ground cover unless otherwise requested by the landowner. If the land is to be placed in crop production the following year, item "f(2)" below shall apply.

(2) Delayed crop production. Agricultural land used for row crop or small grain production which will not be planted in that calendar year due to the pipeline construction shall be seeded with an appropriate cover crop within five days following replacement of the topsoil and completion of deep tillage. However, cover crop seeding may be delayed if construction is completed too late in the year for a cover crop to become established and in such the area shall be dormant seeded and covered with straw mulch to prevent soil erosion and prevent soil crusting.

(3) Woody Vegetation. Areas cleared of woody vegetation will be planted to native seed mixes including grasses such as Canada or Virginia Wildrye. (See Indiana NRCS Standard Upland Wildlife Habitat Management for further guidance).

(4) Wetlands. Any wetlands that are negatively impacted by pipeline construction will be restored to their preexisting condition, including but not limited to restoration of hydrology and vegetative components.

V. Damages to Private Property

a. The pipeline company will reasonably compensate landowners for any pipeline construction-related damages caused by the pipeline company that occur on or off of the established pipeline right-of-way.

b. Compensation for damages to private property caused by the pipeline company may extend beyond the initial construction of the pipeline, to include those damages caused by the pipeline company during future construction, operation, maintenance, and repairs relating to the pipeline.

VI. Clearing of Trees and Brush from the Easement During Pipeline Construction

a. If trees are to be removed from the right-of-way, the pipeline company will consult with the landowner to determine if there are trees of commercial or other value to the landowner.

b. If there are trees of commercial or other value to the landowner, the pipeline company will allow the landowner the right to retain ownership of the trees with the disposition of the trees to be negotiated prior to the commencement of land clearing.

c. Unless otherwise restricted by federal, state or local regulations, the pipeline company will follow the landowner's desires regarding the removal and disposal of trees, brush, and stumps of no value to the landowner by burning, burial, etc., or complete removal from any affected property.

VII. Interference with Irrigation Systems During Pipeline Construction

If the pipeline or temporary work areas intersect an operational (or soon to be operational) spray irrigation system, the pipeline company shall establish with the landowner an acceptable amount of time the irrigation system may be out of service. If, as a result of pipeline construction activities, an irrigation system interruption results in crop damages, either on the pipeline right-of-way or off the right-of-way, the landowner will be reasonably compensated for all such crop damages.

VIII. Pumping Water from Open Trenches During Pipeline Construction

No back filling shall be done in water filled trenches; all freestanding water shall be removed prior to any back filling. If it becomes necessary to pump water from open trenches, the pipeline company shall pump the water in a manner that will avoid damaging adjacent agricultural land, crops or pasture. If water-related damage occurs under this paragraph, the pipeline company shall restore the land, crops, pasture, water courses, etc., to its pre-construction condition or reasonably compensate the landowner for damages.

IX. Advance Notice and Animal Containment

a. The pipeline company will provide the landowner or tenant with a minimum of 72 hours prior notice before accessing his/her property for the purpose of constructing the pipeline or completing routine maintenance or repairs. Prior notice shall first consist of a personal contact or a telephone contact, whereby the landowner or tenant is informed of the pipeline company's intent to access the land. If the landowner or tenant cannot be reached in person or by telephone, the pipeline company will mail or hand deliver to the landowner or tenant's home a dated, written notice of the pipeline company's intent. The landowner or tenant need not acknowledge receipt of the written notice before the pipeline company can enter the landowner's property.

b. The pipeline company must provide a means of enclosing livestock, horses or other animals which are confined to any area by the use of fencing when the original fence will be removed for construction, routine maintenance or repairs. Any temporary fence which is constructed must be of sufficient strength and design to hold the animals which will be housed in the enclosure. Upon completion of the work, the pipeline company shall provide permanent fencing of equivalent strength and design to the original.

X. Designation of a Pipeline Company Point of Contact for Landowner Inquiries or Claims

Every effort will be made by the pipeline company to determine all affected landowners on the route of the pipeline and to provide the Indiana Utility Regulatory Commission (IURC) with a complete and accurate list of the affected owners, their addresses and any other ascertainable contact information. For each pipeline construction project subject to these guidelines, the pipeline company shall designate a point of contact for landowner inquiries or claims and provide the IURC with the name of such designee, as well as a toll-free telephone number and an address through which that person can be reached. The pipeline company shall provide the same information to all affected landowners at least 45 days prior to commencement of construction. Any change in the point of contact shall be promptly communicated in writing to the IURC and landowners. A designated point of contact shall remain available for all landowners for at least one year following completion of construction and for landowners with unresolved damage claims until such time as those claims are settled.

XI. Indemnification

The pipeline company will indemnify all landowners upon which such pipeline is installed, their heirs, successors, legal representatives, and assigns from and against all claims, injuries, suits, damages, costs, losses, and reasonable expenses resulting from or arising out of the laying, maintenance, removal, repair, use or existence of such pipeline, whether heretofore or hereafter laid, including damage to such pipeline or any of its appurtenances and the leaking of its contents, except where claims, injuries, suits, damages, costs, losses, and expenses are caused by the negligence or intentional acts, or willful omissions of such owners, their heirs, successors, legal representatives, and assigns.

XII. Separate Agreements

These guidelines do not preclude the application of provisions for protecting or restoring property that are different from those contained herein, or in a land restoration plan, which are contained in easements or other agreements independently executed by the pipeline company and the landowner. The alternative provision shall not be inconsistent with state or federal law. The agreement shall be in writing.

XIII. Contact Information

A Pipeline Safety Project Coordinator from the Indiana Utility Regulatory Commission is available to assist landowners with any questions related to the Pipeline Construction Guidelines or the project. Please call 1-800-851-4268 or access online at www.irc.in.gov/pipeline/guidelines. In addition, a Project Coordinator will be available at all public hearings and meetings related the project that are held by the pipeline company, the Federal Energy Regulatory Commission, or a local governmental authority.

Other state agencies may have worked, or currently may be working, with the pipeline company on various aspects of the company's application to obtain a Certificate of Public Convenience and Necessity from the Federal Energy Regulatory Commission. As such, the following contact information is provided as an additional resource:

Indiana Department of Environmental Management	800-451-6027
Indiana State Department of Agriculture	317-232-8770
Indiana Department of Natural Resources	317-232-4200
Federal Energy Regulatory Commission (FERC)	866-208-3372 or www.FERC.gov

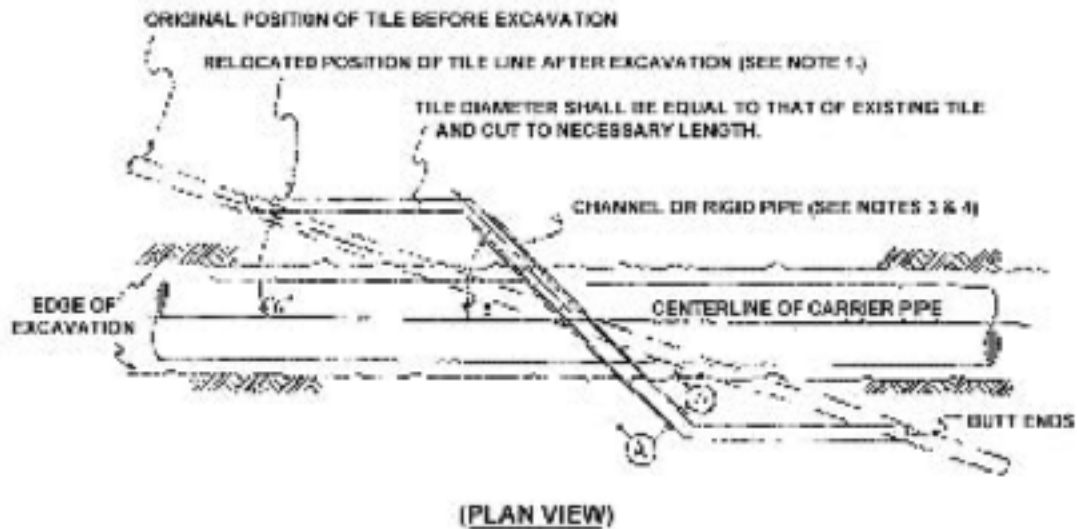
Attached Reference:

Drain Tile Drawing

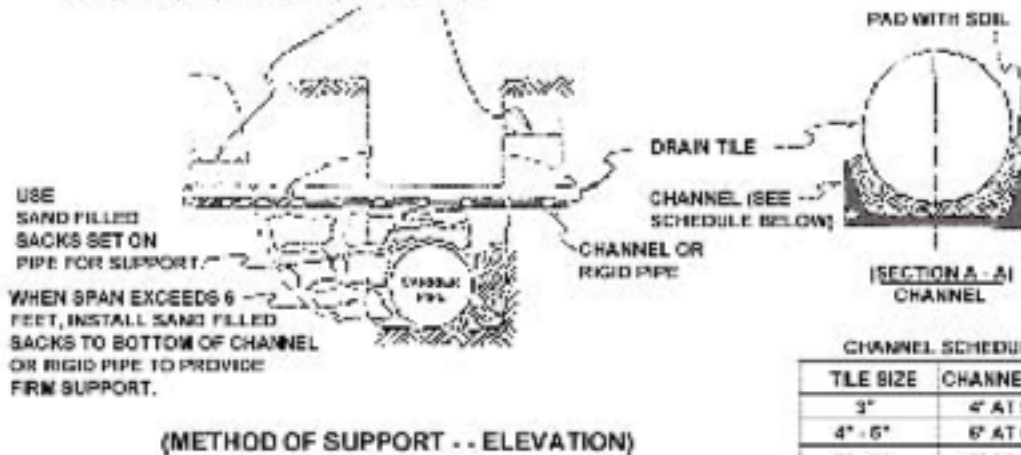
Additional References:

Current Natural Resources Conservation Service (NRCS) Field Office Technical Guide (FOTG) Standards referenced herein can be accessed electronically at:
<http://www.nrcs.usda.gov/technical/efotg>.

RESTORATION OF DRAIN TILE



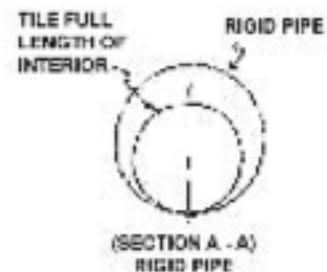
2'0" MINIMUM LENGTH OF CHANNEL OR RIGID PIPE SUPPORT ON SOLID SOIL, EACH SIDE OF EXCAVATION.



CHANNEL SCHEDULE	
TILE SIZE	CHANNEL SIZE
3"	4" AT 5.46
4" - 5"	6" AT 6.76
6" - 8"	7" AT 8.84
10" & LARGER	10" AT 16.55

NOTES:

1. TILE SHALL BE RELOCATED AS SHOWN WHEN ANGLE "A" BETWEEN PIPELINE AND ORIGINAL TILE IS LESS THAN 20° UNLESS OTHERWISE AGREED TO BY LANDOWNER AND COMPANY.
2. ANGLE "B" SHALL BE 45° FOR USUAL WIDTHS OF TRENCH. FOR EXTRA WIDTHS, IT MAY BE GREATER.
3. DIAMETER OF RIGID PIPE SHALL BE OF ADEQUATE SIZE TO ALLOW FOR THE INSTALLATION OF THE TILE FOR THE FULL LENGTH OF THE RIGID PIPE.
4. OTHER METHODS OF SUPPORTING DRAIN TILE MAY BE USED IF THE ALTERNATE PROPOSED IS EQUIVALENT IN STRENGTH TO THE CHANNEL SECTIONS SHOWN AND IF APPROVED BY THE LANDOWNER.



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